Fig.1

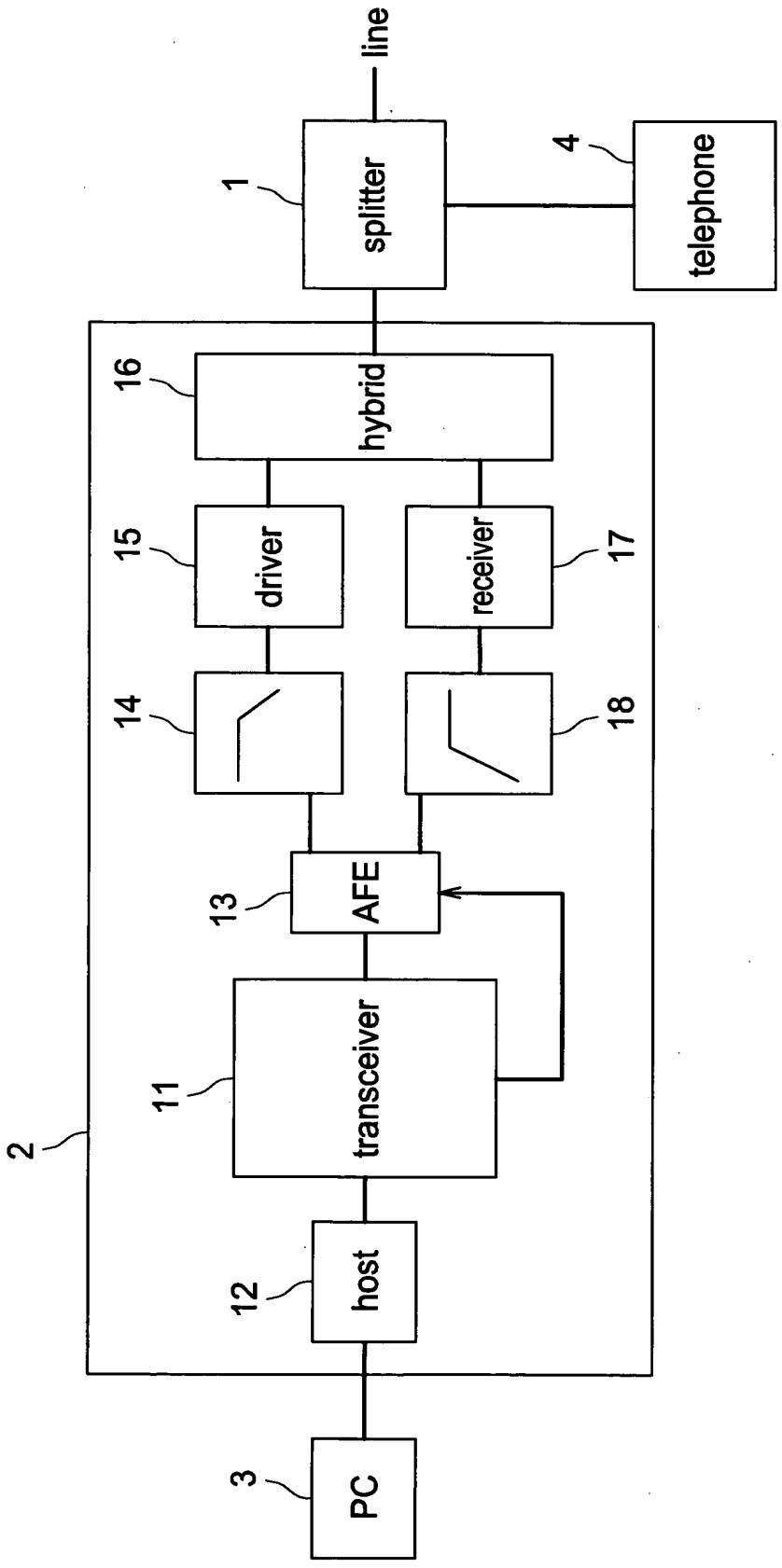

line
1
splitter
4
telephone
2
16
hybrid
15
driver
17
receiver
14
18
13
AFE
11
transceiver
12
host
3
PC

Fig.2

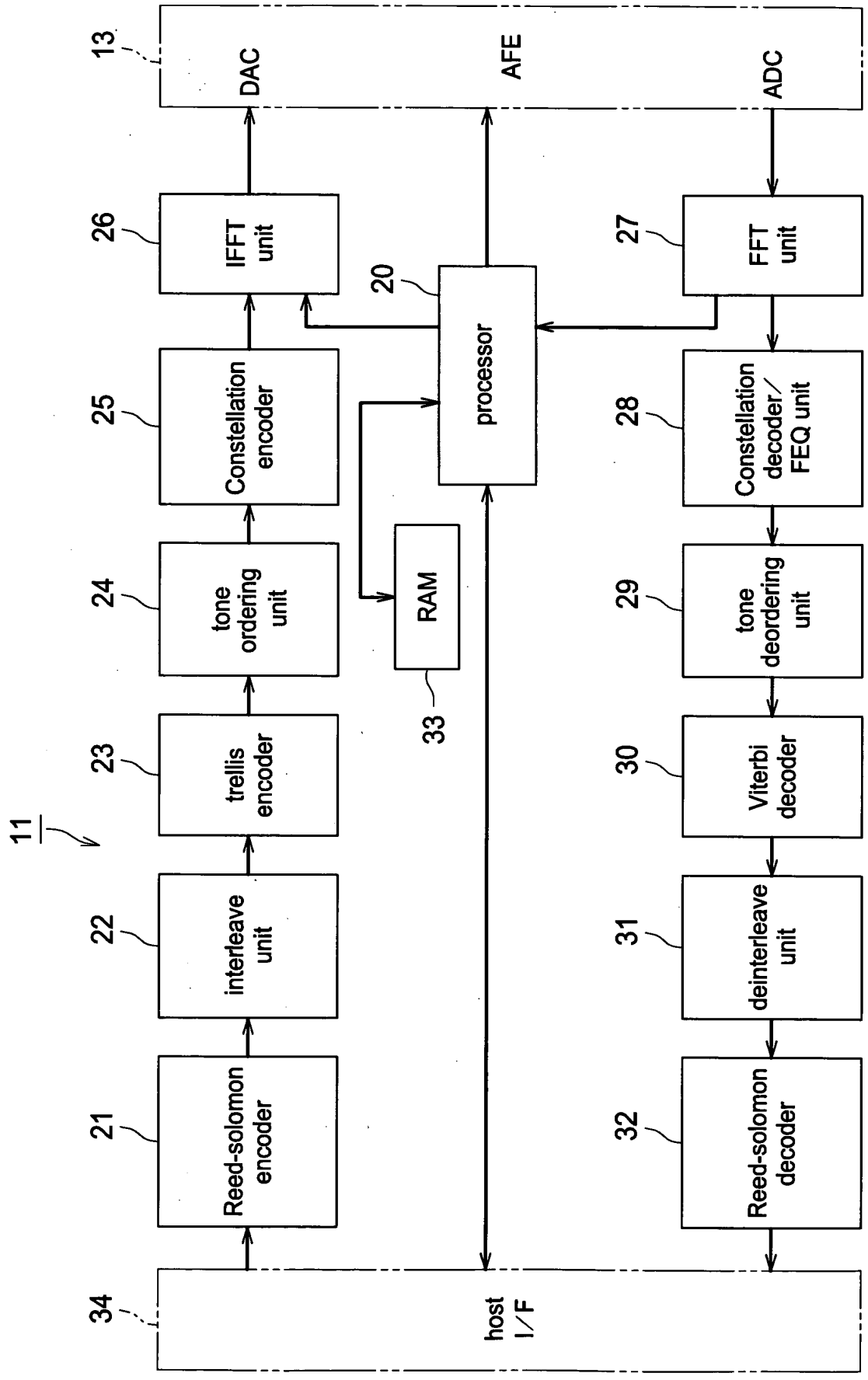

11
13
DAC
AFE
ADC
26
IFFT unit
27
FFT unit
20
processor
25
Constellation encoder
28
Constellation decoder/ FEQ unit
24
tone ordering unit
RAM
33
29
tone deordering unit
23
trellis encoder
30
Viterbi decoder
22
interleave unit
31
deinterleave unit
21
Reed-solomon encoder
32
Reed-solomon decoder
34
host I/F

Fig.3

advance compensation table in 1km line

gain compensation data

sub-carrier	#0	#1	#2	#3	#4	#5
	1.5188	1.7719	1.9713	2.1381	2.2812	2.4060
	#6	#7	#8	#9	.....	
	2.5161	2.6144	2.7030	2.7838	.....	

phase angle (radian)compensation data

sub-carrier	#0	#1	#2	#3	#4	#5
	0.4365	0.6393	0.8104	0.9681	1.1188	1.2659
	#6	#7	#8	#9	.....	
	1.4111	1.5554	1.6993	1.8432	.....	

gain compensation data

sub-carrier	#246	#247	#248	#249	#250	#251
	47.0956	47.5472	48.0027	48.4620	48.9252	49.3923
sub-carrier	#252	#253	#254	#255		
	49.8633	50.3383	50.8173	51.3004		

phase angle (radian)compensation data

sub-carrier	#246	#247	#248	#249	#250	#251
	-2.8967	-2.7666	-2.6366	-2.5066	-2.3767	-2.2468
sub-carrier	#252	#253	#254	#255		
	-2.1171	-1.9874	-1.8577	-1.7282		

Fig.4

advance compensation table in 5km line

gain compensation data

sub-carrier	#0	#1	#2	#3	#4	#5
	8.0816	17.4667	29.7712	44.6828	61.7787	80.6278
#6	#7	#8	#9	·····		
100.8498	122.1447	144.3007	167.1900	·····		

phase angle (radian)compensation data

sub-carrier	#0	#1	#2	#3	#4	#5
	2.1827	-3.0867	-2.2310	-1.4429	-0.6890	0.0465
#6	#7	#8	#9	·····		
0.7725	1.4937	2.2132	2.9327	·····		

gain compensation data(unit 10**8) **is power of 10

sub-carrier	#246	#247	#248	#249	#250	#251
	2.3169	2.4301	2.5488	2.6730	2.8033	2.9397
sub-carrier	#252	#253	#254	#255		
	3.0825	3.2322	3.3889	3.5531		

phase angle (radian)compensation data

sub-carrier	#246	#247	#248	#249	#250	#251
	-1.9174	-1.2667	-0.6165	0.0334	0.6830	1.3322
sub-carrier	#252	#253	#254	#255		
	1.9810	2.6295	-3.0055	-2.3577		

Fig.5

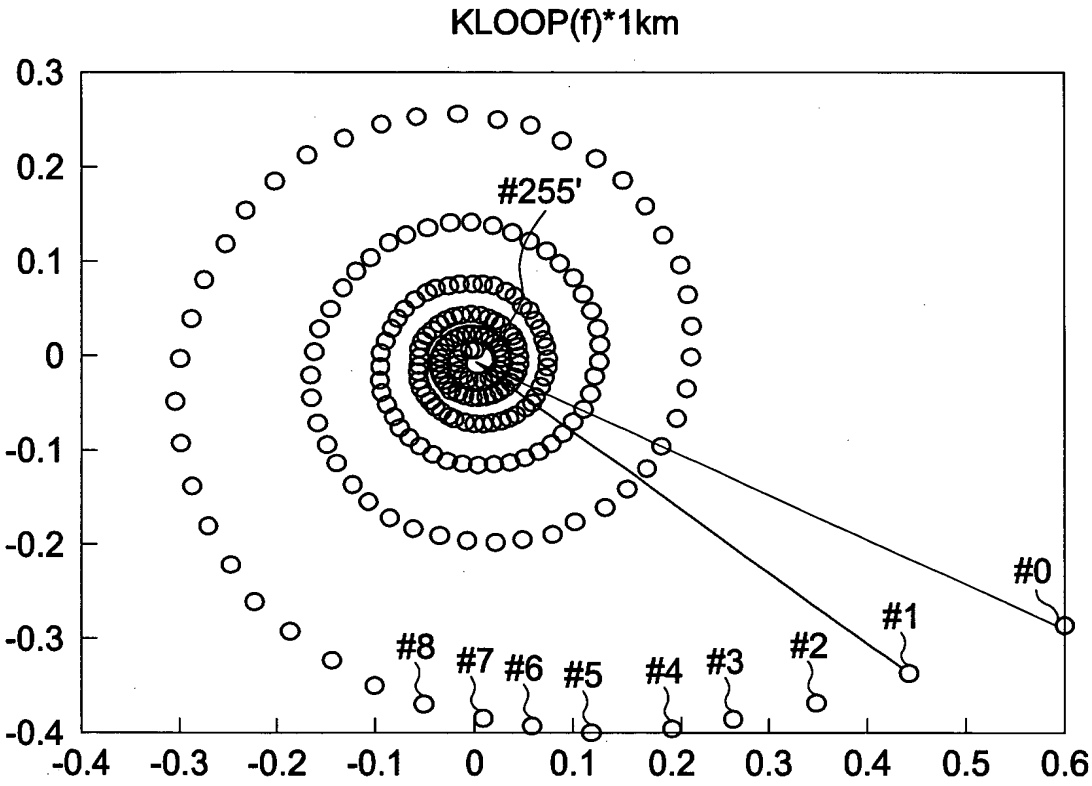

KLOOP(f)*1km
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.4
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
#255'
#0
#1
#2
#3
#4
#5
#6
#7
#8

Fig.6

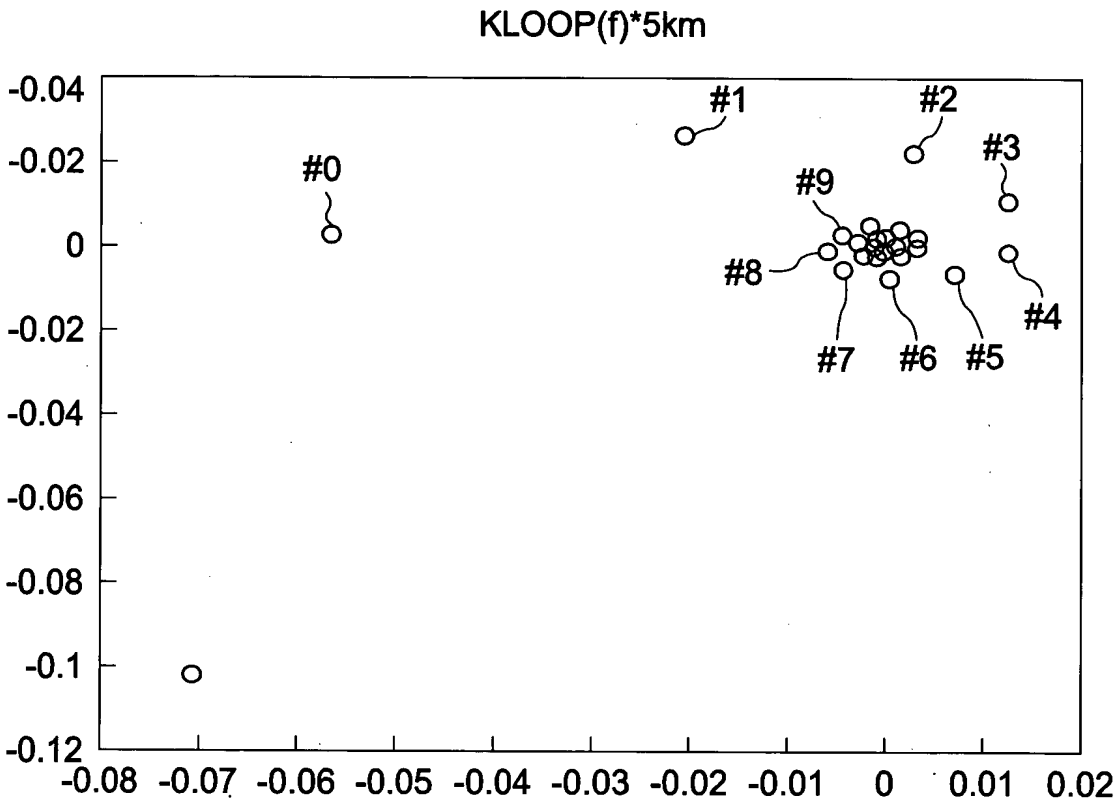

KLOOP(f)*5km
-0.04
-0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
-0.12
-0.08
-0.07
-0.06
-0.05
-0.04
-0.03
-0.02
-0.01
0
0.01
0.02
#0
#1
#2
#3
#4
#5
#6
#7
#8
#9

Fig.7

gain in 1km line

gain

sub-carrier	#0	#1	#2	#3	#4	#5
	0.6584	0.5644	0.5073	0.4677	0.4384	0.4156
	#6	#7	#8	#9	.....	
	0.3974	0.3825	0.3700	0.3592	.....	

phase angle (radian)

sub-carrier	#0	#1	#2	#3	#4	#5
	-0.4365	-0.6393	-0.8104	-0.9681	-1.1188	-1.2659
	#6	#7	#8	#9	.....	
	-1.4111	-1.5554	-1.6993	-1.8432	.....	

gain

sub-carrier	#246	#247	#248	#249	#250	#251
	0.0212	0.0210	0.0208	0.0206	0.0204	0.0202
sub-carrier	#252	#253	#254	#255		
	0.0201	0.0199	0.0197	0.0195		

phase angle (radian)

sub-carrier	#246	#247	#248	#249	#250	#251
	2.8967	2.7666	2.6366	2.5066	2.3767	2.2468
sub-carrier	#252	#253	#254	#255		
	2.1171	1.9874	1.8577	1.7282		

Fig.8

gain and phase in 5km line

gain

sub-carrier	#0	#1	#2	#3	#4	#5
	0.1237	0.0573	0.0336	0.0224	0.0162	0.0124
	#6	#7	#8	#9	.....	
	0.0099	0.0082	0.0069	0.0060	.....	

phase angle (radian)

sub-carrier	#0	#1	#2	#3	#4	#5
	-2.1827	3.0867	2.2310	1.4429	0.6890	-0.0465
	#6	#7	#8	#9	.....	
	-0.7725	-1.4937	-2.2132	-2.9327	.....	

gain(unit 10**(-8)) **is power of 10

sub-carrier	#246	#247	#248	#249	#250	#251
	0.4316	0.4115	0.3923	0.3741	0.3567	0.3402
sub-carrier	#252	#253	#254	#255		
	0.3244	0.3094	0.2951	0.2814		

phase angle (radian)

sub-carrier	#246	#247	#248	#249	#250	#251
	1.9174	1.2667	0.6165	-0.0334	-0.6830	-1.3322
sub-carrier	#252	#253	#254	#255		
	-1.9810	-2.6295	3.0055	2.3577		

Fig.9

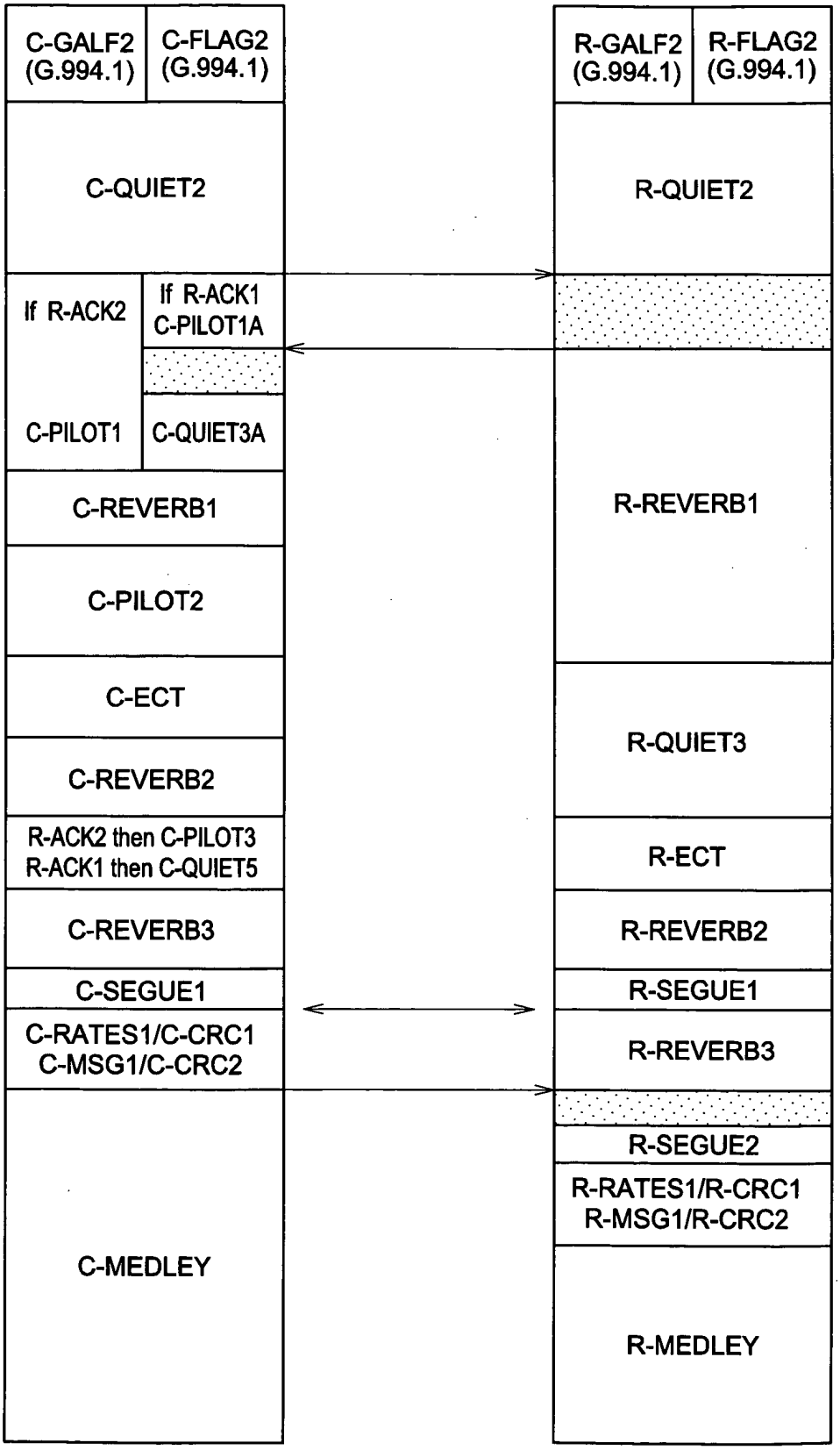
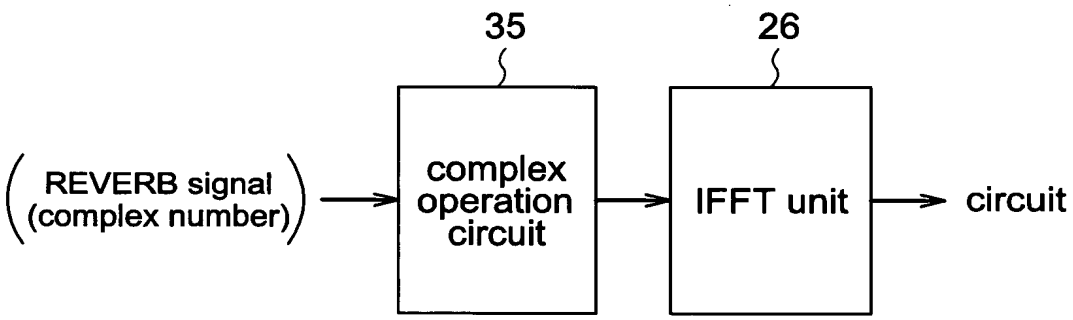

C-GALF2 (G.994.1)
C-FLAG2 (G.994.1)
C-QUIET2
If R-ACK2
If R-ACK1 C-PILOT1A
C-PILOT1
C-QUIET3A
C-REVERB1
C-PILOT2
C-ECT
C-REVERB2
R-ACK2 then C-PILOT3 R-ACK1 then C-QUIET5
C-REVERB3
C-SEGUE1
C-RATES1/C-CRC1 C-MSG1/C-CRC2
C-MEDLEY
R-GALF2 (G.994.1)
R-FLAG2 (G.994.1)
R-QUIET2
R-REVERB1
R-QUIET3
R-ECT
R-REVERB2
R-SEGUE1
R-REVERB3
R-SEGUE2
R-RATES1/R-CRC1 R-MSG1/R-CRC2
R-MEDLEY

Fig.10


35
26
REVERB signal
(complex number)
complex
operation
circuit
IFFT unit
circuit